No. 834,031. PATENTED OCT. 23, 1906.

T. D. TOY.

VEHICLE SHAFT.

APPLICATION FILED MAR. 23, 1906.

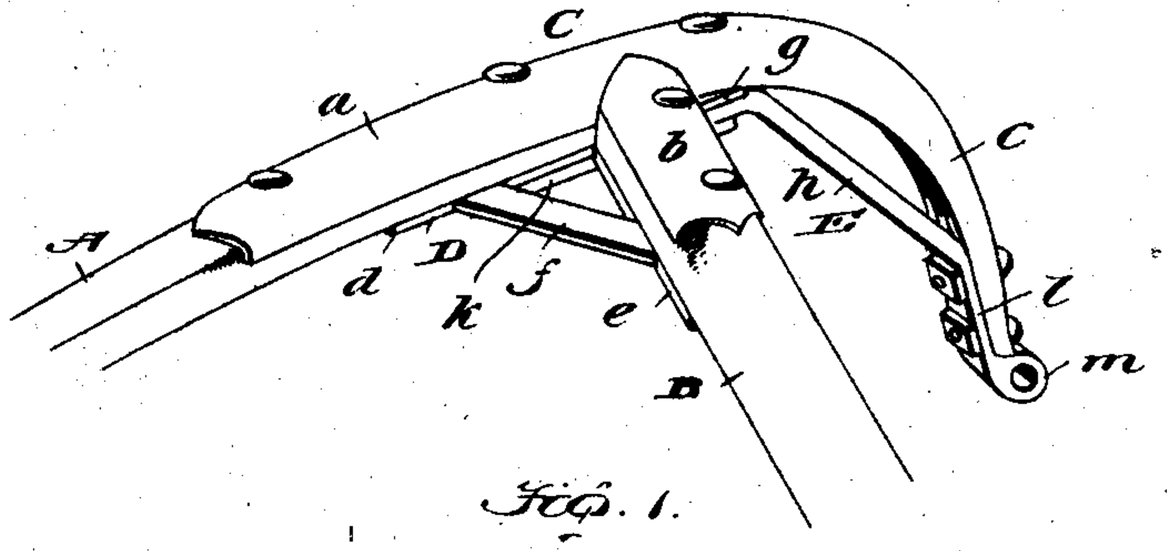

Fig. 1.

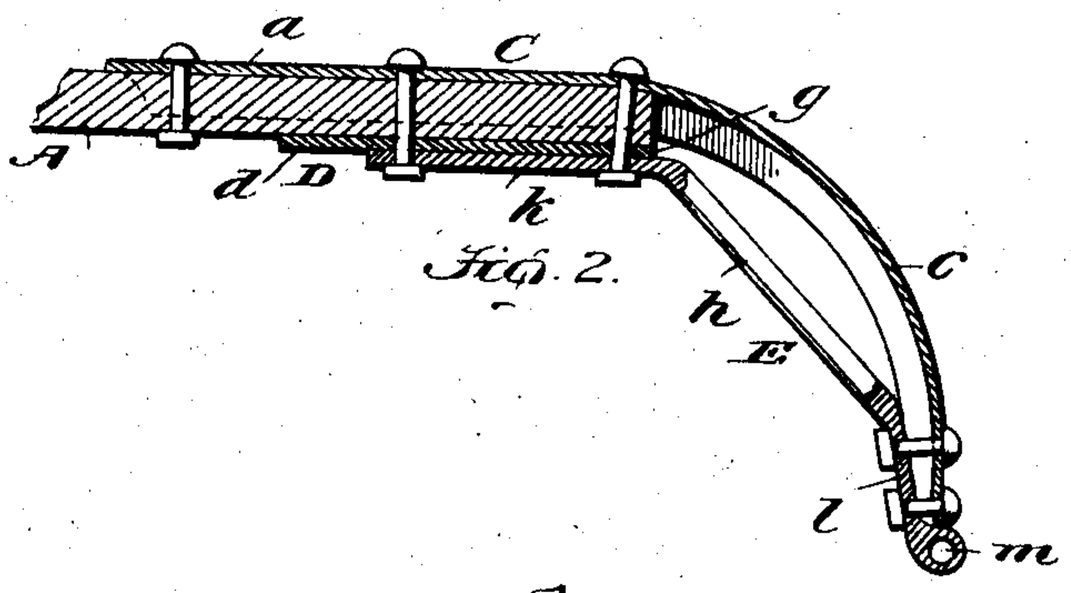

Fig. 2.

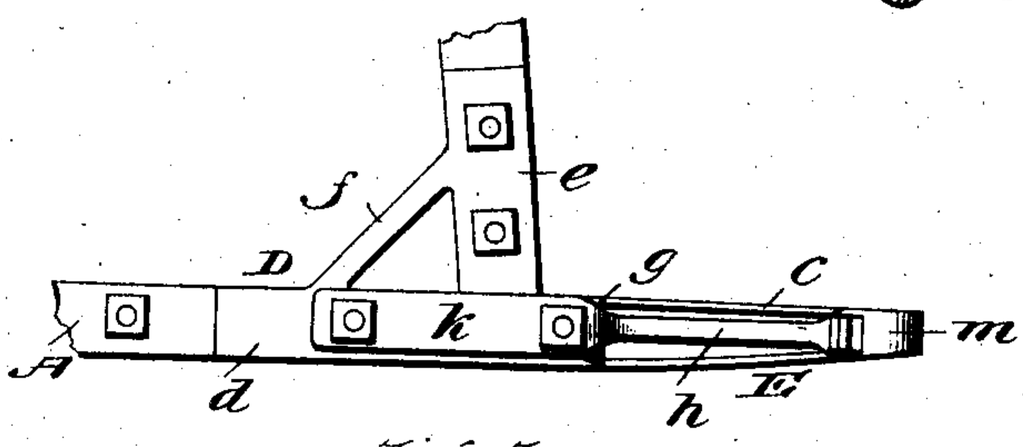

Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

THOMAS D. TOY, OF CHERRYVALE, KANSAS.

VEHICLE-SHAFT.

No. 834,031. Specification of Letters Patent. Patented Oct. 23, 1906.

Application filed March 23, 1906. Serial No. 307,605.

To all whom it may concern:

Be it known that I, THOMAS D. TOY, a citizen of the United States, residing at Cherryvale, in the county of Montgomery and State of Kansas, have invented new and useful Improvements in Vehicle-Shafts, of which the following is a specification.

My invention pertains to vehicle-shafts, and more particularly to shaft-irons; and it consists in the peculiar and advantageous sectional shaft-iron hereinafter described and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 is a perspective view of a portion of a vehicle-shaft equipped with my improvements. Fig. 2 is a longitudinal vertical section of the same, and Fig. 3 is an inverted plan view better illustrating the lower section of the iron.

Similar letters designate corresponding parts in all of the views of the drawings.

Referring to the drawings, A is the shaft; B, the usual cross-bar disposed substantially at a right angle to the shaft, and C, D, and E are the top section, the bottom section, and the strut, respectively, of my novel shaft-iron.

The top section C of the iron is preferably made of steel and is of channel form in cross-section, as illustrated, so as to increase its stiffness and strength. It is provided with a forward straight portion *a*, designed to be arranged on and bolted or otherwise fixedly connected to the rear portion of the shaft A, an arm *b*, reaching laterally inward from the straight portion *a* and designed to rest on and be bolted to the cross-bar B, and a depending and curved rear portion *c*, which is preferably tapered or gradually reduced in width to its lower end, as best shown in Fig. 3.

The bottom section D is in the form of a plate of steel and is made up of arms *d* and *e*, disposed at an approximate right angle to each other and arranged under and bolted to the shaft A and the cross-bar B, respectively, an integral brace *f*, extending between the arms *d* and *e*, and a comparatively short arm *g*, extending rearwardly from the juncture of the arms *d* and *e* and designed to serve an important purpose hereinafter referred to in detail. The strut E is also preferably of steel and comprises an intermediate diagonal rod *h*, a horizontal plate *k*, extending forwardly from the forward end of the said rod and disposed immediately below and bolted to the rear arm *g* and the forward arm *d* of the bottom section D, as well as to the shaft and the top section C, and a plate *l*, depending from the rear end of rod *h* and having an eye *m* at its lower end, which offers an abutment to the lower end of the arm *c* of the top section C and in that way contributes materially to the strength and durability of the iron. Said plate *l* of the strut is bolted to the lower portion of the arm *c* or is otherwise fixedly connected thereto, while the plate *k* of the strut is bolted to the shaft A and the top section C at opposite sides of the adjacent end of the cross-bar B, and hence it will be apparent that the strut will add materially to the rigidity and strength of the structure and will enable the same to withstand any of the shocks and strains to which vehicle-shafts are ordinarily subjected.

In the practical use of my improvements it will be observed that in the event of the heel of a wooden shaft being broken the old iron may be removed and the shaft sawed off immediately in rear of the cross-bar, after which the top section C, the bottom section D, and the strut E of my improved iron may be applied and connected in the order named, when the shaft will be rendered quite as strong, if not stronger, than it was originally. It will also be apparent that when my novel shaft-irons are embodied in a pair of shafts it is unnecessary to tenon the cross-bar B or mortise the shafts, and hence the pair of shafts may be shipped in a knocked-down state and put together at the point where they are to be used. From this it follows that shafts constructed in accordance with my invention take up but a minimum amount of space in a car and may be shipped at a much less cost than ordinary shafts which are not knocked down.

It will be gathered from the foregoing that notwithstanding the practical advantages possessed by my novel shaft-iron the same is simple and inexpensive in construction and adds but little weight to the shaft.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with a shaft and a cross-bar arranged substantially at a right angle thereto; of a shaft-iron comprising a top section of channel form in cross-section having a forward straight portion resting on the shaft, a lateral arm resting on the cross-

bar and a rear depending portion, a bottom section having braced arms disposed at right angles to each other and arranged under the shaft and the cross-bar, respectively, and also having a comparatively short arm extending rearwardly from the juncture of the first-mentioned arm, a strut comprising an intermediate diagonal rod disposed under the rear portion of the top section, a plate carried at the forward end of the diagonal rod and disposed under the shaft and two of the arms of the bottom section, and a plate carried at the rear end of the diagonal rod and arranged against the lower end of the depending portion of the top section and having an eye which presents an abutment to the said end of the top section, a bolt extending through and connecting the top section, the shaft, the forward arm of the bottom section and the upper forward plate of the strut, a bolt extending through and connecting the top section, the shaft and the said plate of the strut as well as the rear arm of the bottom section, and one or more bolts extending through and connecting the lower rear plate of the strut and the depending portion of the top section.

2. The combination with a shaft and a cross-bar arranged substantially at a right angle thereto; of a shaft-iron comprising a top section having a depending rear portion, a bottom section, a strut having an upper forward plate and a lower rear plate provided with an eye which offers an abutment to the end of the depending portion of the top section, bolts extending through and connecting the top section, the shaft, the bottom section and the forward upper plate of the strut, and one or more bolts extending through and connecting the lower rear plate of the strut and the depending portion of the top section.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

THOMAS D. TOY.

Witnesses:
REVILO NEWTON,
GRANT QUEREE.